A52.E496
JACC March 9, 2010
Volume 55, issue 10A

HYPERTENSION, LIPIDS AND PREVENTION

PROGNOSTIC IMPLICATIONS OF ATHEROGENIC/ANTI-ATHEROGENIC LIPID RATIOS IN AN ETHNICALLY DIVERSE POPULATION.

ACC Poster Contributions
Georgia World Congress Center, Hall B5
Sunday, March 14, 2010, 3:30 p.m.-4:30 p.m.

Session Title: Ethnicity and its Effect on Lipids
Abstract Category: Pharmacology/Hormones/Lipids–Clinical
Presentation Number: 1074-102

Authors: *Palaniappan Manickam, Ankit Rathod, Apurva Badheka, Vikas Veeranna, Pawan Hari, Ashutosh Niraj, Sony Jacob, Luis Afonso, Wayne State University, Detroit, MI*

Background: Serum lipid ratios have been proposed as atherogenic indices of cardiovascular disease (CVD). However, comparative data on the prognostic utility of these ratios, especially those using lipoprotein subclasses are scant.

Methods: Multi-Ethnic study of Atherosclerosis (MESA) is a population based study (n=6,814) of White (38%), Black (28%), Chinese (22%) and Hispanic (12%) subjects, aged 45-84 yrs, free from clinical CVD. We did a post-hoc analysis of the NHLBI limited access dataset of MESA subjects (n=6625) to determine whether different lipid ratios (triglyceride/HDL, total cholesterol/HDL, LDL cholesterol/HDL, non-HDL/HDL and LDL-particles (p)/HDL-p concentration) predicts various CVD outcomes. Cox proportional model was used to adjust for cardiovascular risk factors. End-points were all coronary heart disease (CHD), hard CVD and all CVD events (Table).

Results: Mean age was 62±10 yrs; 47% were males, 45% were hypertensive and 50% were smokers. Over an average follow up of 4.5 yrs, 219 (3%) had all CHD, 207(3%) had hard CVD and 310(5%) had all CVD events. Mean of various lipid ratios were: TG/HDL: 0.82 ± 0.7, TC/HDL: 4.02 ± 1.1, Non-HDL/HDL: 3.02 ± 1.1; LDL/HDL: 2.45 ± 0.9; and LDL-p/HDL-p: 3.7 ± 0.4. On multivariate analysis, all lipid ratios were predictive of all endpoints measured, with LDL-p/HDL-p ratio being the strongest predictor (Table).

Conclusion: Compared to other conventional lipid ratios LDL-p/HDL-p ratio is a strong independent predictor of all cardiovascular outcomes.

Prediction of all cardiovascular outcomes based on individual lipid ratios